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LABOR SAVING PRACTICES



IN **HAYMAKING**

SHOWN PICTORIALLY

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MUCH LABOR is wasted in hay harvesting. Wasted labor does not necessarily mean idleness, but wrong methods, inefficient management, and improper or imperfect implements.

Improved methods and proper implements mean more work accomplished at reduced cost.

More horse labor used insures more rapid and much easier work, and often a big saving in hay secured during "catchy" weather.

It is not necessary for the small hay-grower to make a heavy investment in new haying apparatus; but an increased use of horse-power and better working methods will mean more work accomplished by the same force of workers.

This is a picture story of right and wrong methods of the different operations in haymaking. Study of these methods should help the haymaker to do better work at less cost.

LABOR-SAVING PRACTICES IN HAYMAKING

A LARGE AMOUNT of labor is wasted annually in the United States during hay harvest. On some farms this wastage amounts to little, but on many others the loss is serious. "Wasted labor," in this case, does not refer to actual idleness on the part of the workers, but to labor expended unnecessarily on operations which do not utilize labor to best advantage. If an old method can be superseded by a new one that will enable a given crew to accomplish more than before in a given length of time, then it is a wasteful method and should be abandoned.

Thousands of young men have been called to the colors, and on many farms this results in a scarcity of labor. The problem of the hay grower is how to handle his crop with a smaller crew than hitherto, and one often mostly of middle-aged men and boys. With methods used heretofore this type of labor certainly cannot harvest the hay in the usual time, at least on many farms in the East and South, where it has been the custom to use a comparatively large amount of hand labor in making hay.

Although there is a scarcity of man labor, there are still plenty of horses on most farms, and herein lies the solution of the problem. On farms where considerable hay is grown methods must be adopted by which the greater part of the heavy labor is done by horses. This will necessitate the general use of certain types of labor-saving machinery, some of them not so common in the East, which have been thoroughly tested and proved satisfactory in the western part of the United States. The small hay grower, however, need not make a very heavy investment in new haying apparatus, for by re-arranging the working of his crew and using a little more horse labor for the hard work, he can add considerably to the efficiency of his crew.

It is not the purpose of this bulletin to go into the details of hay-making or crew management, but to point out, mostly by illustrations, how time and labor may be saved in haying operations, with the end in view of starting the hay-grower to studying the method he now uses to see whether he is using his labor and equipment to the best advantage.

The time of day when the mower is started has a direct bearing on the amount of hay made per day and the number of men required. This is especially true on farms where it is the custom to haul or stack hay in the afternoon only. If mowing is done in the morning and raking in the afternoon, more men and horses than usual will be required, and if mowing and raking are both done in the afternoon, still more men and horses will be needed.

SIZES OF MOWERS USED

The 5-foot cut is the most common size used in the East. With the present scarcity of labor, it will be economy to use larger mowers; 6-, 7-, and even 8-foot sizes can be used on a great many farms. Some idea of the time saved by using these larger sizes may be had when the difference in the amount of work done by each is known. Under average conditions, a 5-foot mower will cut 10 acres in 10 hours, a 6-foot mower will cut 12 acres, a 7-foot 14 acres, and an 8-foot about 16 acres in 10 hours. It should be borne in mind that more power is required for the wider cuts. Many alfalfa growers are using the 8-foot cut with good success, and make a practice of mowing early in the morning before the dew is off, or even during a light rain. It does not pay to wait until the dew is off, before starting the mower, if the tedder is used to "kick" the water out of the hay. The size of mower used and the time of day it is started are the most important factors in crew arrangement. The use of the tedder and rake are next in importance, and these three implements should be kept clearly in mind when attempting to solve the problem of how to make a small crew efficient.

POOR METHOD AND GOOD METHOD IN MOWING



FIG. 1.—These mowers are too close together. If a slow team happens to be first those behind must travel slower than their natural gait. When one of the front mowers has a breakdown the other teams are often stopped while the repairs are being made. When stopping occasionally to let the teams rest there is often a tendency for the drivers to waste too much time talking and arguing. A better plan is to assign a "land" to each machine, as in figure 2.



FIG. 2.—A good mowing practice, when several machines are used, is for each driver to lay off a "land" for himself and work independently, so there will be no interference from other machines, as in figure 1, and no time will be lost. This method is used on several large hay farms in the South, where negro labor is employed, in order to get a maximum day's work done.

COMMON AND IMPROVED METHODS OF "TURNING"



FIG. 3.—A field crew of 12 negro laborers "turning" a heavy yield of alfalfa and Johnson grass hay in the South. This is too costly a method to use, especially when negro labor is employed, as this type of laborer works slowly when a large number work close together. The outfit shown in figure 4 will accomplish more and better work than the 12 men.



FIG. 4.—The cheapest and most efficient method of stirring hay in the windrow. One man will do more work than the 12 men in figure 3. It is not even necessary to have a man to run the tedder, for a boy big enough to drive a team will do just as much work.

A COMMON RAKE, A BETTER RAKE, THE BEST RAKE



FIG. 5.—The small one-horse rake operated by a man makes raking very costly. Many farmers purchased one-horse rakes years ago and are still using them because they are not worn out. The 8-foot one-horse rake should be used only when a small acreage is grown. For large areas, the one shown in figure 6 is a great saver of time and labor.



FIG. 6.—Raking alfalfa and Johnson grass hay yielding 2 tons per acre. The 12- or 14-foot rake and a good strong team should be used on farms growing 40 acres or more of hay. A boy who understands the work can do as much per day as the ordinary man. This rake will cover 50 per cent more ground and do it more easily than the one shown in figure 5.

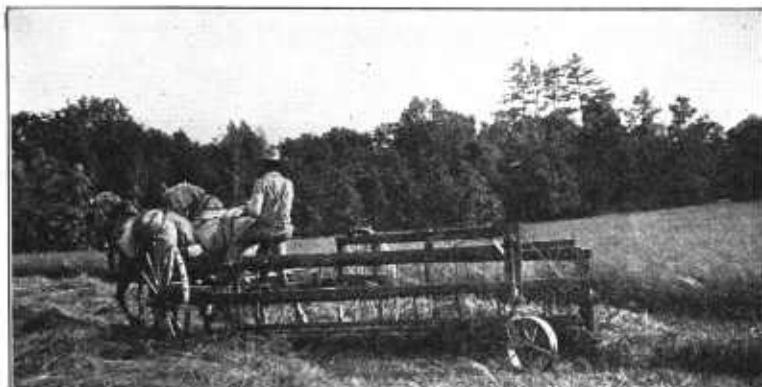


FIG. 7.—When the curing is done in the swath, the crew, if using a hay loader, can start taking the hay from the windrow as soon as the side-delivery has made one double windrow across the field, whereas when the sulky rake is used they will have to wait until the rake has gone several times across the field. The side-delivery rake should be used before the leaves become dry enough to shatter. It is better on large farms than those shown in figures 5 and 6.

HAYCOCKS PROTECTED AND UNPROTECTED

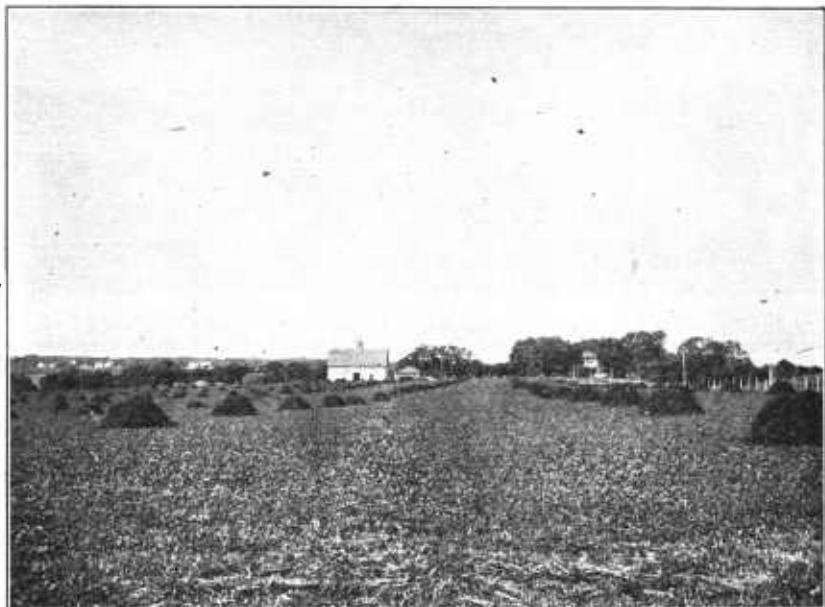


FIG. 8.—Alfalfa curing in the cock. Such cocks will not be injured by a light rain, but unless protected as in figure 9, continued heavy rains will cause the hay to heat, and it will be necessary to spread out the hay and recock it. It is a waste of labor to attempt to cure hay in unprotected cocks during bad weather.



FIG. 9.—If the weather is clear and the hay is in proper condition when put into the cock, there will be no necessity for hay-caps or for further labor until the hay is thoroughly cured and ready to be hauled. It may be handled as in figure 8. But hay-caps will pay for themselves in one year when the weather is bad. Hay-caps are more especially needed with clover and alfalfa hay, which cures slowly.

HAY BUNCHED BY WOMAN-, MAN-, AND HORSE-POWER



FIG. 10.—Negro women bunching hay in the South. On some hay farms the women are used to bunch the hay that is to be loaded onto the wagon by hand. This is an expensive method of bunching, and not to be compared to the methods shown in figures 11 and 12.



FIG. 11.—Bunching hay with a two-horse sulky rake. This outfit can bunch 30 or more acres per day. A man is not necessary to do this work, for a boy can do it just as well.



FIG. 12.—Hay bunched with the push rake. A great deal of labor can be saved by using the push rake to bunch the hay after it has been raked into the windrow. It is a good practice to have two men working together to round up the bunches, since more can be accomplished than when each man works alone.

HAY-HAULING ON HIGH WAGON AND SMALL RACK vs. LOW WAGON AND LARGE RACK



FIG. 13.—It is a waste of time to pitch hay onto a small hayrack on a high-wheeled wagon. Such an outfit should never be used to haul hay except for short distances. A much larger load may more easily be put on a low-wheeled wagon with a large rack, as shown in figure 14.



FIG. 14.—A large hayrack on a low-wheeled wagon is the best type to use when it is necessary to haul with a wagon.

HAY-LOADING BY HAND-POWER AND HORSE-POWER



FIG. 15.—Loading hay in the hardest and most expensive manner. The men are working hard but the horses are resting while the load is being put on. It is much better to work together as shown in figure 16.

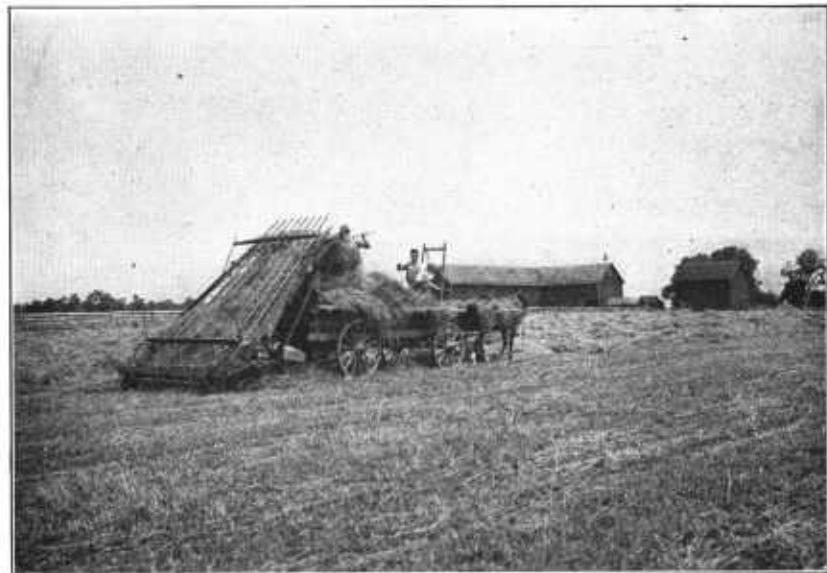


FIG. 16.—Loading with a hay loader. The hard part of the work is done by the horses. A crew using a loader can handle about 30 per cent more hay than when it is pitched on by hand. When a small boy is used to drive the team two men can handle the hay without difficulty, thus saving one man over the method shown in figure 15.

HAY-CURING ON TRUCKS IN BAD WEATHER



FIG. 17.—Curing hay on trucks. The hay is put onto the truck when about half cured and allowed to remain from 3 days to a week. There is less labor in this method than when hay is cocked and hauled to the stack or press with wagons or push rakes. The second empty truck is trailed along to save time. A completed and protected truck-load is shown in figure 18.

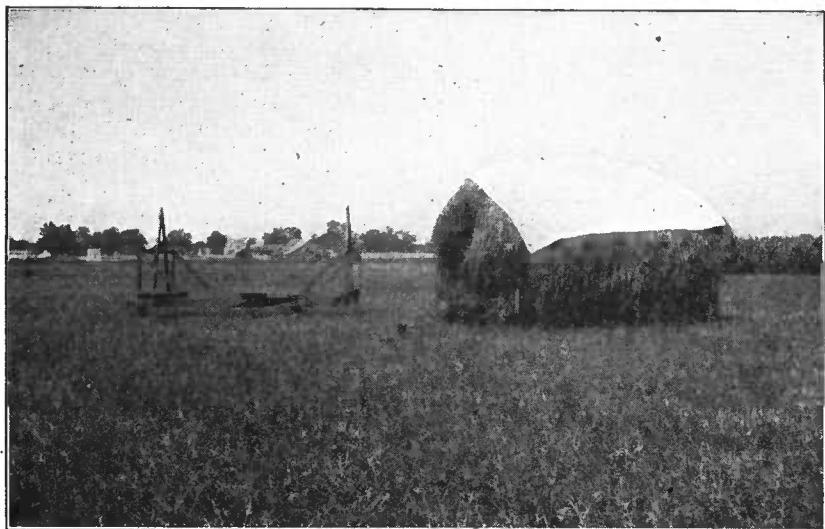


FIG. 18.—Curing hay in bad weather on trucks. The truck keeps the hay off the ground, thus preventing injury from dampness, and the canvas cover keeps the rain from wetting the top of the hay. The truck was developed in the South, where haymaking is carried on with difficulty on account of a great deal of unfavorable haying weather. Trucks are usually homemade. The load is being put on in figure 17.

EXTREMES OF INEFFICIENCY AND EFFICIENCY IN HAULING HAY



FIG. 19.—Handling hay in a very primitive manner. Scenes like this are often witnessed in the South, where the boll-weevil has made it impossible to grow cotton and the former cotton-grower is just beginning to grow hay for the market. This hay was bunched by women, as shown in figure 10, a few minutes before it was loaded on the wagon. About 500 pounds make a load on the wood rack. This method is both costly and wasteful. A big saving over this method is shown in figure 20.



FIG. 20.—The most economical method of hauling hay to the stack, barn, or hay press when the distance is not much more than one-fourth of a mile. One man or boy with a good push rake and team used to the work will handle more than three times as much hay as the crew shown in figure 19.

ELIMINATING HAND LABOR IN STACKING



FIG. 21.—An old "back-breaking" method in use for more than 100 years. It consists of nearly all hand-work. This is the slowest and most costly of all methods of making hay. Note the small, poorly built stack at right. A large amount of hay is entirely spoiled in stacks of this type. A larger, higher, and better stack is possible by the method shown in figure 22.



FIG. 22.—Stacking hay with a push rake and an overshot stacker, mounted on wheels, eliminates nearly all of the heavy work. The trouble with this crew is that not enough push rakes are used. With a yield of from one to one and a half tons per acre, two men on the stack can easily handle all of the hay brought in by three push rakes. A vast saving in labor and hay is possible over the method shown in figure 21.

HORSE AND WAGON STACKING vs. PUSH-RAKE STACKING

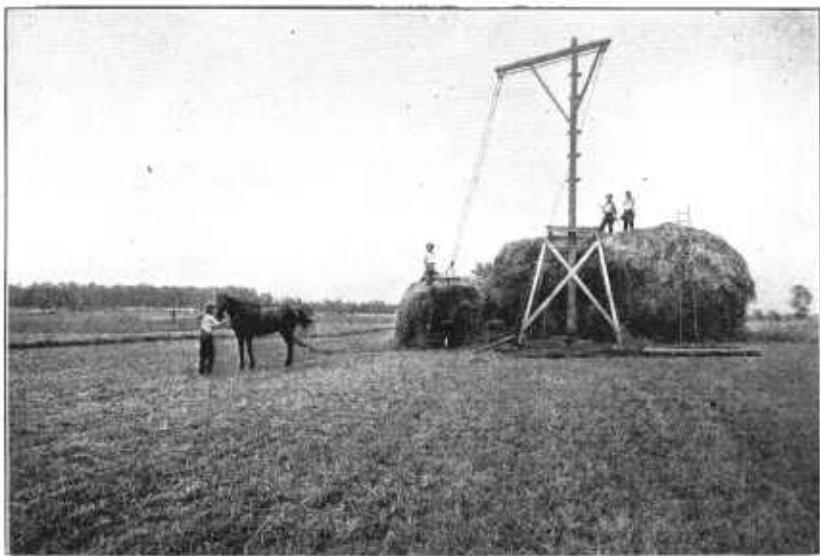


FIG. 23.—Unloading hay with a stacker equipped with a double harpoon fork. The horse does the lifting and a load can be unloaded in a few minutes. This stacking outfit was homemade and cost very little compared to the value of the labor it saves, but harder work is needed to get the hay to the stack than in figure 24. There are many types of efficient homemade and factory-made stackers in use in the western part of the United States.

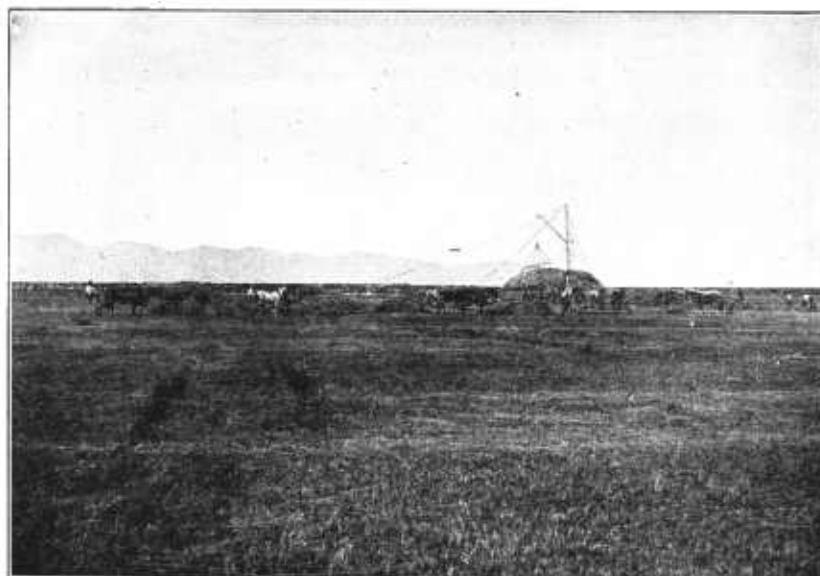


FIG. 24.—A large haying crew at work in the West. Seven push rakes are used in this crew, four of which are shown in the picture. The other three have dumped their loads near the stack and returned to the field. Too many push rakes result in a waste of labor, but this method is much more rapid and easier than that shown in figure 23.

HAND HAY STACKERS vs. HORSE STACKERS



FIG. 25.—A very expensive method of getting hay onto the stack. The hay is brought to the stack with a push rake, which is the most up-to-date way of hauling hay. It is pitched onto the stack by two men, each of whom pitches half of it until the stack reaches a height of about 10 feet. From then until the stack is finished it is necessary for one man to pitch the hay to an empty wagon, from which the second man pitches it to the stack. This operation reduces the amount stacked per hour just one-half, and is very inefficient. A hay stacker like that shown in figure 26 should be used to increase the capacity of the crew and enable them to build better and larger stacks.

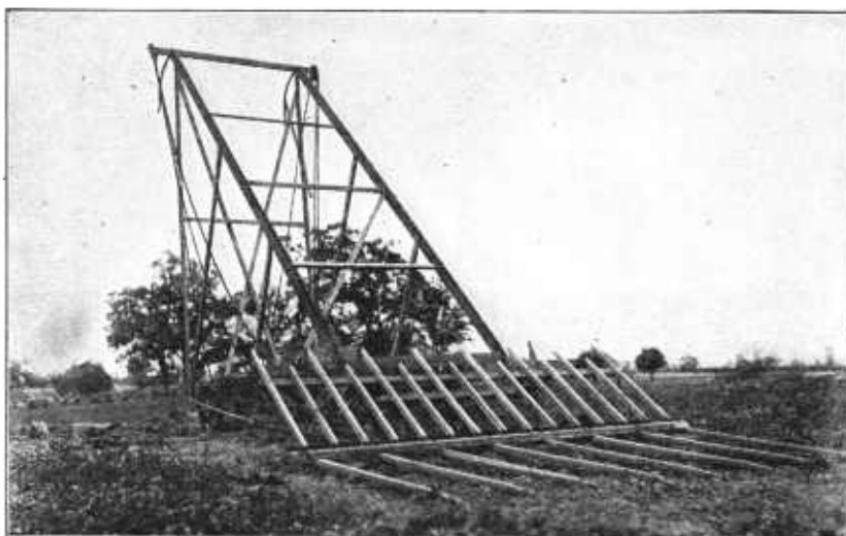


FIG. 26.—A very satisfactory type of overshot stacker mounted on the running gears of a low-wheeled wagon. There are no complicated parts about this stacker and the most inexperienced laborer can operate it successfully. This stacker can be easily and quickly moved, which makes it especially adaptable on farms where the fields are not very large or are some distance apart. This type will last 10 years or more if given ordinary care when not in use, and would be a great labor-saver compared with method shown in the upper picture.

SAVING TIME FOR THE PRESS CREW



FIG. 27.—Bunching hay in order that the press crew can start early in the morning and do a full day's work. One man, by working in the afternoon, can round up enough hay, bunched by push rakes, to keep the press going until the dew is gone from the hay in the windrow. When the hay is not bunched the crew will lose two or more hours on mornings when there is a heavy dew.

HARD WORK IN GETTING HAY TO THE PRESS



FIG. 28.—Carelessness in setting the press may result in a loss of labor. This press has been set at the end of the stack instead of the middle. When the press is set properly two men can get plenty of hay to it. In this instance, however, two men cannot get the hay to the press fast enough, since they have to carry the hay from the far end of the stack. In order to run this press to its capacity it will be necessary to put another man on the stack.

GETTING HAY TO THE PRESS—WAGON vs. PUSH-RAKE

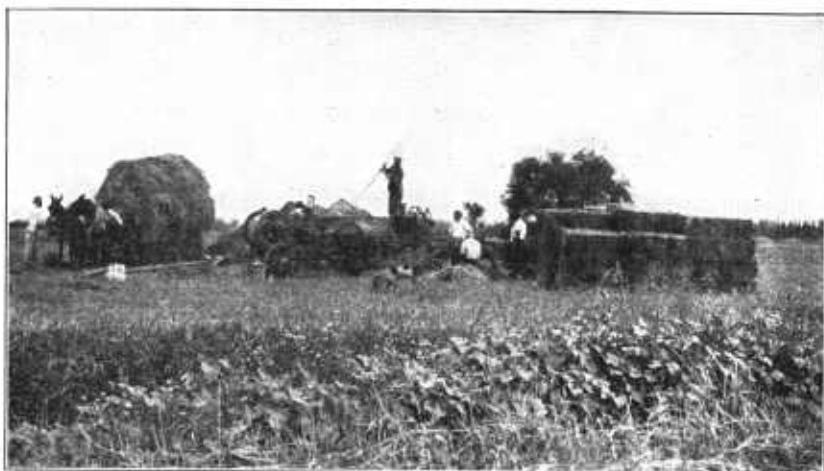


FIG. 29.—A costly method of getting the hay from the cock to the press in the field. It was necessary to use six men and six horses to get the hay to the press when hauling hay in the wagon bed. The cost per ton for baling by this method is very high and could easily be greatly reduced by the method shown in figure 30.



FIG. 30.—How a neighbor of the owner of the farm shown in figure 29 gets his hay to the press. One man or boy and a good stout pair of mules can easily do the work done by men and six horses on the adjoining farm. The cost per ton when using the push-rake to get the hay to the press is much less, and releases five men and four horses for other farm work.

DUMPING CLOSE TO THE HAY-PRESS KEEPS IT GOING



FIG. 31.—Wasting one-half of the pitching crew's labor. The push rake dumps the hay so far away from the press that one man must pitch all of it to a second man, who pitches it to the feeding table. This makes it impossible to furnish the press with sufficient hay to keep it running to its greatest capacity. Part of the time small forkfuls are fed, sometimes followed by overfeed charges, and some of the time the press works in idleness while waiting for hay. Much better management is shown in figure 32.



FIG. 32.—A well-arranged crew baling hay in Mississippi. Only one push rake full of hay is dumped at a time close to the press. The push rake in the left foreground is waiting until all of the hay is cleaned up in front of the press. The hay is dumped so that two men can easily pitch just the right amount to make a charge, and thus keep the press working steadily to capacity. The owner of this farm spends all of his time in the field with his workers and has been very successful in making hay for the market. He wouldn't tolerate such practices as that shown in figure 31.

COMBINATION PUSH RAKE AND OVERSHOT STACKER



FIG. 33.—The combination stacker is a combination of push rake and overshot stacker, since it does the work of both. It was designed to enable a minimum crew to stack hay. It can be used to take the hay from the windrow, swath or cock, and place it on any part of the stack as desired. It can be used to advantage to load hay from the windrow or cock on wagons. This machine is sometimes used to put hay directly into hay barns. It is generally used at the stack and either takes the hay directly from the push rake or from the ground near the stack where the hay has been dumped by the push rake. It will save from one to two or more men in sections where the ordinary stacker is used.

OTHER LABOR-SAVING PRACTICES

A few labor-saving practices in haymaking that have not been illustrated may be of help to the hay-grower.

Keep Mowers in Repair.—Mowers should be kept in good repair, especially if operated by laborers or others who know very little about machinery. The most important thing is to see that the cutter bar is lined up properly in order to prevent breaking knife-bars. It is a good practice to start mowing in the morning with two sharp knives, the extra one to be used in the afternoon or to replace a broken knife. Mowers should be oiled often, as oil makes the machine run easier and last longer.

Use Water Bottle to Clean Cutter Bar.—In some parts of the South the mower is not started until after the dew is off on account of trouble caused by mud clogging the knife. This mud is caused by the dirt from crawfish chimneys mixing with the dew from the hay. After the dew is off the dry dirt does not do much damage. While the dew is on a mower can be run without trouble. One large hay-grower keeps a barrel of water and several quart bottles in the field that is being mowed. When the mud begins to dry and clog the knife, the mower is taken to the water barrel and driven in a circle, while in gear, and water is poured from the bottle onto the knife and the mud is soon all washed out. This practice allows a full day's mowing.

Keep the Barn Crew Busy.—When a crew is kept at the barn to unload and store away the hay it should be kept busy all of the time. If the hay does not come in fast enough to do this, it is often a good practice to put the barn crew to loading and hauling and have enough men, usually three, come in with each load and put it into the barn.

Gasoline-Operated Press Requires Less Men Than Steam Press.—The steam press requires more men to operate it than a press driven by a gasoline engine. The steam press uses at least two more men, an engineer and water boy. Those who are intending to purchase a power press should keep this fact in mind.

More Hay Should be Baled in the Field.—Baling from the windrow or cock is the cheapest method of making hay that is to be baled. It saves a great deal of time, and requires considerably less labor than when hay is stacked or put into the barn and afterwards baled. Those growing hay for the market should investigate this method of making hay, since it has been tried in many parts of the United States and found to be practical if done right.